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NORMATIVE INFLUENCE ON CONDOM USE IN THE PERSONAL NETWORKS OF FEMALE COCAINE SMOKERS

Alan J. Richard, David C. Bell, and Isaac D. Montoya

Attitudes-norms research (the theories of planned behavior and reasoned action) has been successful in accounting for many types of behavior change. One of the strengths of this approach has been to combine individual beliefs and normative influences in the explanation of behavior change. However, the conceptualization of normative influence in these theories makes very strong assumptions about self-awareness in the selection of normative referents. These assumptions are particularly problematic when applied to female cocaine smokers, who report frequent sex while under duress or while cognitively impaired. In this study the original conceptualization of normative influence and two alternatives (assuming emotion-based and interaction-based selection of normative referents) are operationalized to evaluate stage of change for condom use among women who are heavy crack cocaine users with multiple sex partners. Results show that stage of change for use of condoms with nonmain partners is best accounted for by interaction-based selection of normative referents.

Over the last few years, a number of researchers have underlined the importance of social norms in sexual transmission of HIV (Abraham & Sheeran, 1994; Doll & Beeker, 1996; Rhodes, Stimson, & Quirk, 1996; Thornton & Catalan, 1993) and the adoption of less risky behavior (DiClemente 1991; Godin, Savard, Kok, Fortin, & Boyer, 1996; Kelly, 1994; Kelly et al. 1995; O'Reilly & Piot, 1996). Associations between norms and intentions to perform AIDS prevention behaviors have also been reported (Baker, Morrison, Carter, & Verdon, 1996; de Wit, van Griensven, Kok, & Sandfort, 1993; Fishbein, Chan, O'Reilly, & Schnell, 1992; Peterson et al., 1992; White, Terry, & Hogg, 1994). In addition to performance of and intention to adopt risk reducing practices, peer norms have been reported to be associated with the maintenance of those practices (Adib, Joseph, Ostrow, & James, 1991).

Alan J. Richard, David C. Bell, and Isaac D. Montoya, are with the Affiliated Systems Corporation.

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Address correspondence to Alan J. Richard, Affiliated Systems Corporation, 3104 Edloe, Suite 330, Houston, TX 77027-6022; E-mail: authors@affiliatedsystem.com.

NORMATIVE REFERENTS

On the surface, evidence would seem to suggest that the concept of norms is a powerful predictor of HIV risk behavior. However, a number of conceptual ambiguities surround sociological and social psychological usages of the term norms. These ambiguities raise important questions about the interpretation of norms data in the context of HIV risk. One of the many questions that remains unanswered in the current literature on HIV risk is, *which* social groups influence risk behavior? Or, to use sociological language, which groups or persons serve as normative *referents* for HIV risk behavior?

Contemporary expectancy-value theories of behavior, including the popular Theory of Planned Behavior (Ajzen, 1991), assert that an actor's evaluation of the source of norms regarding a behavior influences that actor's performance of the behavior. In formal terms, this assertion has been expressed by defining the actor's "subjective norms" as the cross products of perceived norms attributed to specific persons or groups, and the actor's "willingness to comply" with these perceived norms. This expression allows for the possibility that different individuals or groups in an actor's social environment may exert different levels of normative pressure. However, discussions of expectancy-value theory have seldom been careful to specify the *process* through which some groups and persons in an actor's social environment become normative referents and others do not (e.g., Mclaws, Oldenburg & Ross, 1993; Nucifora, Gallois, & Kashima, 1993; Timmins, Gallois, Terry, McCamishi, & Kashuma, 1993; Vanlandingham, Suprasert, Grandjean, & Sittitrai, 1995). The disregard for normative referent criteria in expectancy-value theory is consistent with the theory's more or less strict cognitive-behavioral orientation. Consistent with this orientation, Ajzen (1985) and Fishbein (1980) have asserted that volitional behaviors are ultimately determined by conscious beliefs and that all beliefs that influence performance of a specific behavior are mediated by similarly conscious cognitive components.[1] Thus, Ajzen and Fishbein's (1980) recommendation that researchers measure "willingness to comply" by simply asking subjects how much they "want to do," "are willing to do," or "care" what specific social others want them to do neatly sidesteps the issue of normative referent selection criteria. From a cognitive-behavioral perspective, this refusal to speculate on referent selection criteria makes a great deal of sense. If normative referent selection is a self-conscious process, then actors are aware of this process, and researchers do not need to know anything about selection criteria in order to identify a subject's normative referents. Researchers only need to ask the subject. Under this assumption the question of referent selection can be deferred, along with other questions regarding distal influences on behavior. Moreover, even if normative selection criteria are implicit rather than explicit (even if people do not use an explicit set of criteria to decide which social others will be allowed to influence them), actors may know *which* social others function as normative referents for them. In other words, actors may know *who* influences them even without knowing *why*.

However, social influence research raises doubts about the degree to which actors are aware of either the "why" or the "who" of normative referent selection. In laboratory experiments, subjects have been found to select normative referents based on implicit heuristic criteria such as attractiveness, imputed group membership (ste-

[1] In the theory of reasoned action (Ajzen & Fishbein, 1980), these are behavioral attitudes and subjective norms. Ajzen's (1991) theory of planned behavior (Ajzen, 1991) adds perceived behavioral control to these but limits its effect on those behaviors that are relatively nonvolitional.

reotypes), or frequency of contact, apparently without being aware that they are using these implicit heuristic rules (see reviews by Eagly & Chaiken, 1993; Petty & Cacioppo, 1986). Moreover, research suggests that actors fail to identify normative referents as such when these referents are selected using these implicit heuristic rules (Stryker & Serpe, 1994; Vorauer & Miller, 1997). Self-aware, explicit cognitive processing may be less influential in decision making for persons who are suffering from deficits in attention and concentration, such as those associated with chronic, frequent cocaine use (Strickland et al., 1993), or for persons who are distracted by other pressing concerns, such as hunger, cold, fear, and so on (Petty & Cacioppo, 1986). If normative referents can be influential without an actor's awareness, this makes a difference in terms of measurement methods. As discussed above, directly asking a subject to report on the degree to which she is willing to comply with specific social others is an adequate way to measure social influence only if normative referents are known to the actor as such. If normative referents are not known to the actor as such, then this approach is inadequate, even if the actor is aware of other characteristics of these referents or of her own relationship to them. Moreover, if normative referents are unknown as such to the actor, models of behavior that incorporate the social influence domain must identify *implicit* criteria that can help us identify which social others actors unconsciously select as normative referents for specific behavioral domains.

In this article the explicit normative referent selection hypothesis derived from attitudes-norms theory is compared to two alternative hypotheses regarding normative referent selection in predicting condom use. The explicit normative referent hypothesis, given by expectancy-value theory, states that an actor's subjective norms, a product of the normative beliefs of social others and the extent to which the actor is explicitly concerned with what these social others think about the behavior in question, will be associated with the actor's condom use, intentions and behavior. The second hypothesis is suggested by the social support theoretical orientation (Antonucci & Jackson, 1987). This hypothesis states that an actor's implicit emotional norms, a product of the normative beliefs of social others and the extent to which the actor feels emotionally close to these social others, will be associated with the actor's condom use, intentions and behavior. The third hypothesis is suggested by the social exchange theoretical orientation (Yamagishi, Gillimore, & Cook, 1993). This hypothesis states that an actor's implicit interactive norms, a product of the normative beliefs of social others and the extent to which the actor and these social others perform actions for the sake of each other, will be associated with the actor's condom use, intentions and behavior.

All three hypotheses are tested in the context of a planned behavior model to predict stage of change for condom use. According to the planned behavior model, volitional behavior is the direct result of behavioral intention, and intention is the direct result of attitudes (posited in the model as the actor's estimation of the likelihood of various outcomes of a contemplated behavior, weighted by that actors preferences for each of these outcomes) and subjective social norms. To the degree that a behavior is nonvolitional, the model posits that this behavior is influenced by barriers to intention (operationalized in the model as perceived behavioral control, or self-efficacy). The planned behavior model has exhibited some success in predicting HIV risk behavior in previous studies (see Abraham, Sheeran, & Orbell, 1998), although it has also been criticized for an excessive reliance on the assumption of volitional, self-aware decision making for explaining HIV risk among women and among chronic, frequent drug users (Gillespie, 1997). The hypotheses are tested for a sample of at-risk women who use

crack cocaine. Previous studies have reported that at-risk women who use crack cocaine are frequently under pressure to have sex with men in exchange for crack or to avoid violence (Inciardi, 1995) and engage in sex when their cognitive abilities are impaired by cocaine intoxication (Logan, Leukefeld, & Farabee, 1998). People have been found to be more likely to base behavioral decisions on implicit rules when their cognitive abilities are impaired, when they are distracted, when they are under intense external pressure, or when their motivation is low (Chaiken, 1980; Fazio, 1990). Thus we would expect implicit rather than explicit normative referent selection for condom use to be particulary likely in this sample.

METHODS

The background of this study is described in Montoya (1997). Between April and June 1995 research assistants recruited 30 African American and 31 Hispanic female crack cocaine smokers from the community using targeted chain referrals (Braunstein, 1993). Eligibility screening and interview activities took place in a neighborhood storefront center. To be eligible, all participants had to self-report having used crack cociane within the previous 48 hours, and had to submit a urine specimen that was positive for cocaine metabolites. Of the women participating in the study, 90% (n = 54) reported having smoked crack cocaine an average of four or more times a day during the previous 30 days. In addition, all eligible participants self-reported penile-vaginal intercourse in the past 30 days and self-reported penile-vaginal intercourse with someone other than a main partner in the previous 60 days. In this sample, "main partner" could mean spouse, common-law spouse, or a specific individual to whom the female respondent felt an exclusive emotional bond (but not an exclusive sexual bond).

All respondents signed an informed consent form prior to the interview. The interview required approximately 30 minutes and participants were each paid $10 for their time. Following the interview, participants were offered HIV antibody testing with pretest and posttest counseling (Coyle, 1993).

STAGE OF CHANGE

A stage of change measure was constructed for a precisely defined targeted behavior: "insisting that men (besides your main partner) use a condom every time you have vaginal sex with them." The concept of measuring behavior change in terms of the five stages of change used in this study was first suggested by Prochaska and DiClemente's transtheoretical model (Prochaska & Velicer, 1997). A number of studies support the construct and convergent validity of this measurement concept for assessing condom use behavior (Lauby et al., 1998; Polacsek, Celentano, O'Campo, & Santelli, 1999; St. Lawrence et al., 1998; Stark et al., 1998). Previous research with populations of chronic or frequent drug users who are not in treatment has suggested that there may be substantially more variance in stage of change for condom use with partners other than main partner than for condom use with main partner (Jamner, Wolitski, & Corby, 1997; Rhodes & Malotte, 1996).

A stage of change protocol adapted from the Centers for Disease Control and Prevention's AIDS Community Demonstration Projects (Schnell, Calavoti, Fishbein, Chen, & the AIDS Community Demonstration Project, 1996) was used to classify respondents into precontemplation, contemplation, preparation, action, or mainte-

nance stages. A respondent who was not currently using a condom in vaginal sex with nonmain partners and who was "very sure" she would start insisting on using a condom with nonmain partners within 2 weeks was classified in the "preparation" stage. A respondent who was "very sure" she would start insisting within the next 6 months (but not in the next 2 weeks) was classified in the "contemplation" stage. A respondent who was not sure of using a condom within the next 6 months or 2 weeks was classified in the "precontemplation" stage of change. A respondent who was currently using a condom and has been using one for less than 6 months was classified in the "action" stage. A respondent who had been using a condom for vaginal sex with nonmain partners for 6 months or more was classified in the "maintenance" stage. Stage of change was coded from 1 (precontemplation stage) to 5 (maintenance stage).

BEHAVIORAL ATTITUDES

Each respondent described her level of agreement or disagreement with 21 behavioral beliefs about insisting on condom use every time in vaginal sex with a nonmain partner. Behavioral beliefs were measured by responses to items phrased as, "If you were to insist that men (besides your main partner) use a condom every time you had vaginal sex with them..." followed by specific potential outcomes. Allowable responses ranged from 0 (disagree completely) to 6 (agree completely). Outcome evaluations were measured by responses to items phrased as, "How important is..." followed by specific potential outcomes. Allowable responses ranged from 0 (not important at all) to 6 (very important).

Using the procedures developed by Ajzen and Fishbein (1980; Ajzen, 1991), "behavioral attitudes" was computed for each issue as the mean of the component cross products (behavioral belief multiplied by outcome evaluation for that belief). Because all behavioral belief items were measured on the same interval-level scale, as were all outcome evaluation items, they can be combined with an equal weighting linear transformation. Nine of the cross products represented positive attitudes (in favor of using a condom) and 12 represented negative attitudes (against using a condom). Consistent with previous research on behavioral attitudes and decisional balance (Bowen & Trotter, 1995; Lauby et al., 1998), these items were combined into a positive behavioral attitudes variable (condom use benefits, or "pros") and a negative behavioral attitudes variable (condom use costs, or "cons"). The 21 behavioral attitude cross products were tested for dimensionality by a principal components analysis. Two factors emerged which corresponded exactly to the two computed behavioral attitudes variables.

NORMATIVE BELIEFS

Norms, like behavioral attitudes, were measured using cross-products of normative beliefs and a relationship measure. Individual members of a respondent's social network were identified using a network mapping technique originally used by Antonucci (1986) for mapping support networks among the elderly according to four levels of emotional closeness. Normative beliefs were measured by the respondent's assessment of how much each of the personal network members she named would approve or disapprove of her insisting that men (besides her main partner) use condoms every time she has sex with them. Allowable responses ranged from 0 (feel absolutely I should not) to 6 (feel absolutely I should). Three alternative norms variables were computed using cross products of normative beliefs and separate items corresponding to the three hypotheses of this study.

WILLINGNESS TO COMPLY AND SUBJECTIVE NORMS

Willingness to comply was measured by how much the respondent reported she cared what each member of her social network thought about her performance of the targeted behavior. Following Azjen and Fishbein's (1980; Azjen, 1991) suggested scaling, allowable responses ranged from 0 (do not care at all what they think) to 4 (care absolutely). Subjective norms were computed as the mean of the cross products of normative beliefs and willingness to comply for each network member. The range of possible subjective norm scores was 0–24. Respondents also categorized each network member as a type of relationship such as parent, grandparent, sibling, child, or other relative, spouse, boyfriend/girlfriend, best friend, other friend, running buddy, church leader, drug dealer, or other. A subjective norms score for each category of relationship was assigned to each participant as the mean subjective norm score for all that participant's network members who a participant had placed into a given relationship category (e.g., parent, spouse, lover, friend, drug partner, drug dealer). Not all types of network member were described by each respondent.

EMOTIONAL CLOSENESS AND EMOTIONAL NORMS

The respondent's emotional closeness to various persons was measured using the network mapping procedure described above. In this procedure, emotional closeness is indicated by a respondent's placement of each network member within one of four concentric areas representing "people who are important in your life right now or with whom you spend time." Individuals were shown a diagram of these circles, and were asked to imagine themselves at the center of the diagram. Inside the circle closest to the center, they were asked to imagine "people that you feel closest to, that it is hard to imagine life without." Using names or pseudonyms given by the respondent, these individuals were marked in the appropriate circle. Inside the next closest circle, respondents were asked to place "people that you don't feel quite that close to, but who are still important to you." In the third circle, respondents were asked to place people they felt less close to than either of the other two circles. Outside the circles, respondents were asked to place individuals with whom they had regular contact "but that you don't feel are close to you." In this way, an inventory was taken of the respondent's entire personal network. The four levels of closeness were coded from 0 (outside the circles) to 3 (in the innermost circle). Emotional norms was computed by summing the cross-products of closeness and normative beliefs for each network relationship and then taking a mean. To make scores comparable, each score was multiplied by 4/3 so that the range of possible emotional norm scores was 0–24. An emotional norms score for each category of relationship was assigned to each participant as the mean emotional norm score for all network members who the participant had placed in that relationship category.

SUPPORTIVE INTERACTION AND INTERACTIVE NORMS

To determine supportive interaction, respondents were asked two questions about each person in their network: "How often does ___ do things for you?" and "How often do you do things for ___?" Each of these items was coded from 0 (less than one time a month) to 7 (four or more times a day). The two responses were summed to give a measure of interactive support. Interactive norms was computed for each network rela-

Table 1. Description of Sample

Variable	Frequency	(%)
Race/Ethnicity		
African-American	29	(48)
Hispanic-American	32	(52)
Age		
30 and under	7	(12)
31–40	24	(39)
40+	8	(13)
30-day sex partners (other than main partner)		
1	10	(16)
2–5	37	(61)
6 or more	14	(23)
Times in drug treatment		
Never	31	(51)
Once	12	(20)
2 or more	17	(28)
Crack smoking		
Less than 4 times per day	6	(10)
4 or more times per day	54	(90)
Stage of change		
Precontemplation	20	(33)
Contemplation	0	(0)
Preparation	10	(16)
Action	3	(5)
Maintenance	28	(46)

tionship by taking the cross product of interactive support and normative beliefs. Each cross product was multiplied by 4/14 so the range of possible interactive norm scores was 0–24. An interactive norms score for each category of relationship was assigned to each participant as the mean interactive norms score for all network members who the participant had placed in that relationship category.

SELF-EFFICACY

Self-efficacy was computed as the mean of a 10-item scale (Rhodes & Malotte 1993). Items were measured by how sure a respondent reported she was that she could perform the targeted behavior under specific circumstances. On seven of the items, allowable responses ranged from 0 ("Absolutely sure I cannot") to 6 ("Absolutely sure I can"). On the remaining three items, allowable responses ranged from 1 ("Very sure I can not") to 4 ("Very sure I can"). For subsequent analyses which investigate intentions to use condoms by those with high self-efficacy, the self-efficacy variable is dichotomized at a natural cut point at the median.

RESULTS

The sample is described in Table 1. Most of the sample was between 31 and 40 years old. All of the study participants reported at least one sex partner in addition to the main partner; most participants reported having sex with between two to five men in addition to their main partners in the previous 30 days. The vast majority of the sample (90%) reported smoking crack at least four times per day. According to their self-reports, 33% of the sample were in the precontemplation stage for using a condom

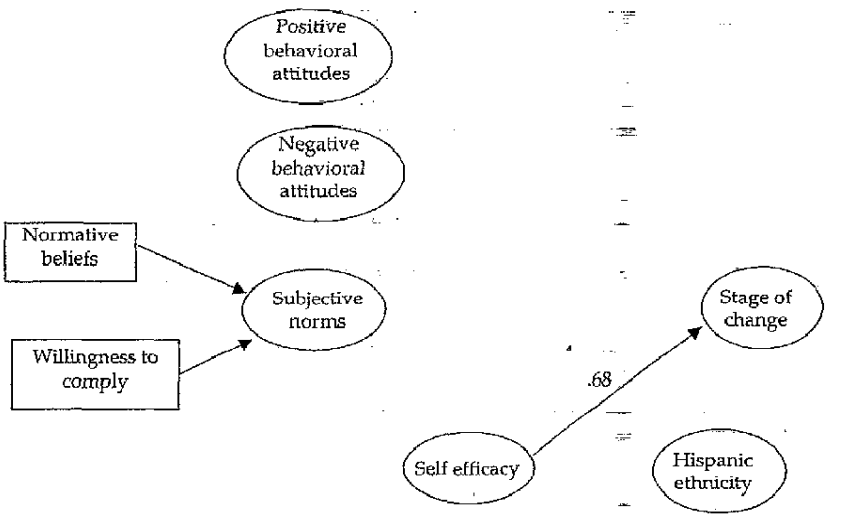

Figure 1. Explicit Planned Behavior model (Subjective Norms)

Note. Subjective norms was computed as the mean of crossproducts of Normative beliefs and Willingness to comply, over all partner types. Aside from the arrows showing how subjective norms was computed, only arrows that significantly predicted Stage of change are shown.

with sex partners other than their main partners, none was in the contemplation stage, and 46% were in the maintenance stage for continuing to use condoms with sex partners other than their main partner.

The first step in the analysis was to assess whether or not the original theory of planned behavior or its alternate versions would successfully predict intention to use a condom every time with sexual partners other than their main partner. This involved regressing stage of change onto the explanatory variables of planned behavior theory: positive behavioral attitudes, negative behavioral attitudes, subjective norms, and self-efficacy. Because of the two racial groups represented in the sample, Hispanic ethnicity was included as a control variable. For the alternate versions of planned behavior theory, subjective norms was replaced by emotional norms and interactive norms, respectively. The three analytical models are shown in Figures 1–3. In each figure, the two components of each norms variable are shown in boxes at the left. Only predictors of stage of change significant at the .05 level are shown in the figures. Given that the analyses conducted here involve a comparison across models, there is no explicit test to compare the coefficients of subjective norms, emotional norms, and interactive norms with each other. Instead we use the success of each variable within its own model to evaluate its usefulness.

The analysis of the basic planned behavior model is given in Figure 1. The overall F was 22.2 ($df = 5,51$), significant at the .001 level (adjusted $\bar{R}^2 = .65$). In this model a significant ($p < .05$) positive effect of self-efficacy was found on the respondent's stage of change. Respondents reported a more advanced stage of change to the extent that they felt they were in control of condom use in their sexual relationships with nonmain partners. In this sample, respondent stage of change was not associated with positive behavioral attitudes, negative behavioral attitudes, subjective norms, or His-

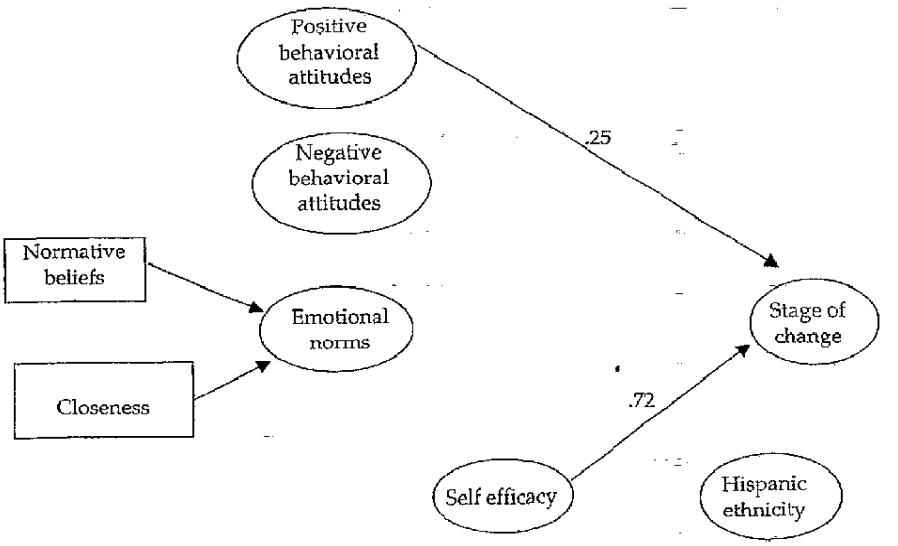

Figure 2. Implicit Planned Behavior Model (Emotional Norms)

Note. Emotional norms was computed as the mean of crossproducts of Normative beliefs and Closeness, over all partner types. Aside from the arrows showing how Emotional norms was computed, only arrows that significantly predicted Stage of change are shown.

panic ethnicity. Correlations among the norm measures and other independent variables are given in Table 2. There was a zero-order correlation of .65 between positive behavioral attitudes and subjective norms; this collinearity may have served to obscure the effect of either variable in this analysis.

The analysis of the emotion-based variation of the planned behavior model is given in Figure 2. This model is the same as the original model except that the variable emotional norms has been substituted for subjective norms. In this analysis, the overall F was 20.9 (df = 5,55), significant at the .001 level (adjusted R^2 = .62). In this model, positive behavioral attitudes and self-efficacy demonstrated significant positive effects on stage of change. Negative behavioral attitudes, emotional norms, and Hispanic ethnicity were not significantly related to stage of change. No collinearity issues appeared to be raised by this analysis.

The analysis of the interaction-based variation of the planned behavior model is given in Figure 3. In this model, interactive norms has been substituted for subjective norms. In this analysis, the overall F was 22.0 (df = 5,53), significant at the .001 level (adjusted R^2 = .64). In this model, positive behavioral attitudes, interactive norms, and self-efficacy all showed significant positive effects on stage of change. Negative behavioral attitudes and Hispanic ethnicity were not significantly related to stage of change.

Because of the consistent importance of self-efficacy in each model, we conducted a further series of analyses. In these analyses, separate regressions were conducted with high self-efficacy women and low self-efficacy women. None of the models achieved significance for the low-self efficacy women. The models for high self-efficacy women are given in Figures 4–6. Positive behavioral attitudes are significantly related to stage of change in all three models. Across the analyses, subjective

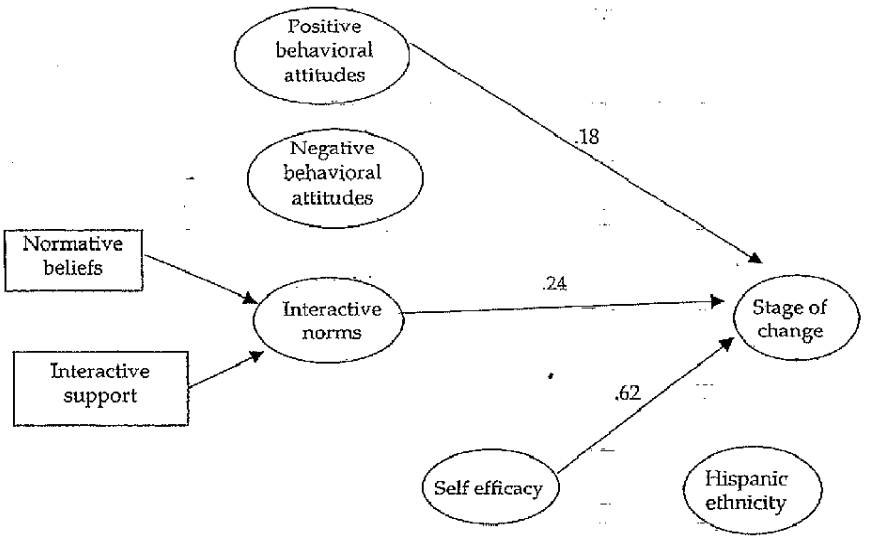

Figure 3. Implicit Planned Behavior Model (Interactive Norms)

Note. Interactive norms was computed as the mean of crossproducts of Normative beliefs and Interactive support, over all partner types. Aside from the arrows showing how Interactive norms was computed, only arrows that significantly predicted Stage of change are shown.

norms has a significant effect on stage of change in Figure 4, emotional norms does not have a significant effect in Figure 5, and interactive norms continues to have a significant effect on stage of change in Figure 6.

To better understand the differences among subjective norms, emotional norms, and interactive norms, the beliefs these female respondents were most inclined to follow were compared for various types of partners. Respondents reported relationships to parents ($n = 24$ relationships described), siblings (19), children (28), other relatives (15), spouses (17), best friends (30), lovers (36), other friends (29), running buddies (22), drug dealers (4), and others (23). These results are given in Figure 7. In the figure, subjective norms, emotional norms, and interactive norms are plotted for each category of persons about whom these women reported. Subjective norms estimates, based on willingness to comply, show that when it comes to safe condom use with ca-

Table 2 . Correlations Among Independent Variables

	Subjective Norms	Emotional Norms	Interactive Norms	Positive Behavioral Attitudes	Negative Behavioral Attitudes	Self Efficacy	Hispanic Ethnicity
Subjective norms	1.00	.60	.57	.65	.17	.32	.05
Emotional norms	.60	1.00	.18	.30	-.11	.30	-.12
Interactive norms	.57	.18	1.00	.44	.21	.37	.22
Positive behavioral attitudes	.65	.30	.44	1.00	.21	.13	.13
Negative behavioral attitudes	.17	-.11	.21	.21	1.00	-.32	.22
Self efficacy	.32	.30	.37	.13	-.32	1.00	-.11
Hispanic ethnicity	.05	-.12	.22	.13	.22	-.11	1.00

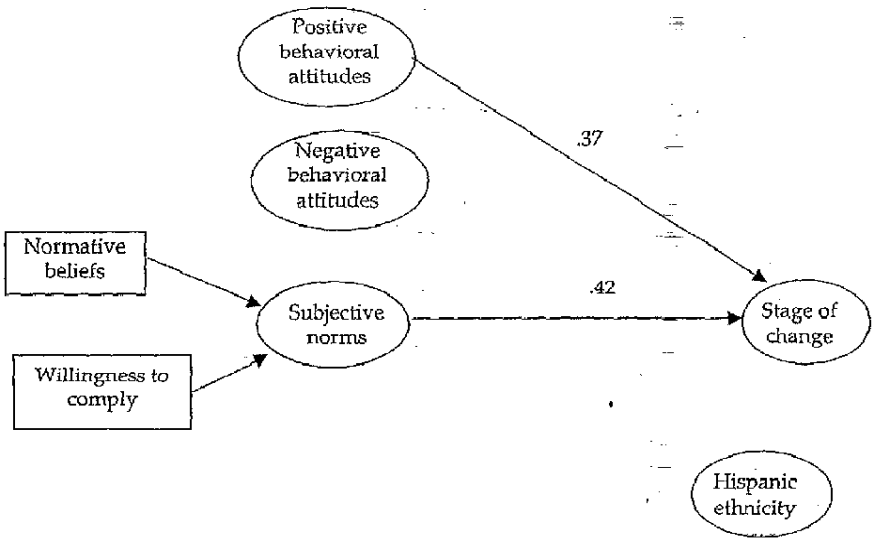

Figure 4. Explicit Planned Behavior Model (Subjective Norms) (High self-efficacy only)

Note. Subjective norms was computed as the mean of crossproducts of Normative beliefs and Willingness to comply, over all partner types. Aside from the arrows showing how subjective norms was computed, only arrows that significantly predicted Stage of change are shown.

sual sex partners, these female respondents were more likely to report a willingness to comply with the wishes of their parents, siblings, their children, and other relatives. All categories of relatives received higher subjective norm scores than any category of nonrelatives. Spouses and best friends had higher subjective norm scores than lovers for these women. Running buddies, a category of friends who were drug users, had lower scores. Drug dealers had the lowest scores.

Emotional norms, based on the respondent's reported closeness to the partner, showed a different pattern. The highest level of emotional norms was reported for children, parents, and spouses. Siblings and other relatives had the next highest levels. Other friends, running buddies, "other," and drug dealers had the lowest levels of emotional norms.

Interactive norms, based on the amount of mutual support given, showed a still different pattern. The highest level of interactive norms was reported for spouses and lovers. Categories of children, parents, siblings, best friends, other relatives, and running buddies had the next highest levels. "Others," other friends, and drug dealers had the lowest levels of interactive norms.

DISCUSSION

As indicated by R^2, the three regression models exhibited nearly the same power to predict stage of change for insisting on condoms with casual partners. However, the results gave only partial support to the first hypothesis, and did not support the second hypotheses. Neither subjective norms nor emotional norms were associated with stage of change when analyzed for the entire sample. However, for high self-efficacy women,

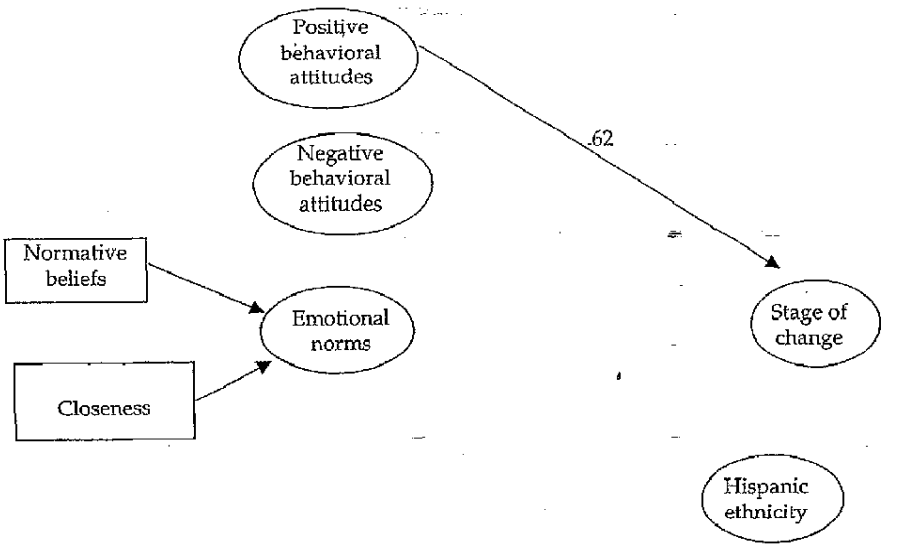

Figure 5. Implicit Planned Behavior Model (Emotional Norms) (High self-efficacy only)

Note. Emotional norms was computed as the mean of crossproducts of Normative beliefs and Closeness, over all partner types. Aside from the arrows showing how Emotional norms was computed, only arrows that significantly predicted Stage of change are shown.

subjective norms did significantly predict stage of change with a standardized regression coefficient of .42 ($p < .05$). However, subjective norms showed signs of collinearity with positive attitudes, indicating that these two dimensions may be less than completely distinct. This collinearity is consistent with Vallerand, Deshaies, Cuerrier, Pelletier, and Mongeau (1992) who detected substantial conceptual and statistical overlap between subjective norms and attitudes. The third hypothesis was supported. Interactive norms, a measure of supportive interaction, yielded a moderate standardized regression coefficient of .24 ($p < .05$) for the entire sample, and a coefficient of .37 ($p < .05$) for the high-efficacy sample. Women in the sample did not appear to select normative referents for insisting on condom use with sex partners other than their main partner on the basis of emotional closeness. Only women in the sample with high self-efficacy were apparently able and willing to directly identify normative referents (subjective norms and interactive norms). Normative referents appear to have been most consistently selected on the basis of mutual supportive interaction. The interactive norms model is the most robust and appears to operate at all levels of self-efficacy. The subjective norms model also operates, but only among women with high levels of self-efficacy.

It should be noted that the test of normative referent selection criteria used here assumes specific population characteristics and a specific type of behavior. It is possible that normative referent selection criteria vary along with the type of behavior being contemplated, the actor's background, or the actor's immediate situation. It is possible that women like those in our sample use emotional closeness or some other criterion to select normative referents for behaviors other than the one tested here. It is also possible that women who do not use illegal drugs or whose situation differs in other ways from those in our study would use a different normative referent selection

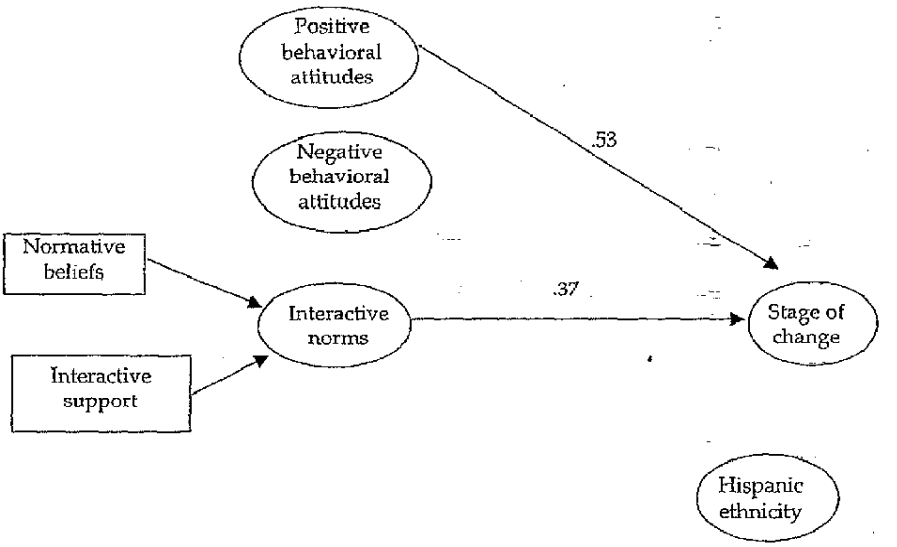

Figure 6. Implicit Planned Behavior Model (Interactive Norms) (High self-efficacy only)

Note. Interactive norms was computed as the mean of crossproducts of Normative beliefs and Interactive support, over all partner types. Aside from the arrows showing how Interactive norms was computed, only arrows that significantly predicted Stage of change are shown.

criterion for insisting on condom use. In interpreting these results, then, both the type of behavior in question and the population must be considered.

The norms scores on relationship categories (see Figure 7) offer clues to interpreting the relative weakness of emotional norms. For women in our sample, one type of sex partner—the spouse—scores almost equally high on all three normative referent criteria. However, interactive norms and subjective norms scores for another type of sex partner—the lover—are higher than does emotional norms. Apparently, women in this sample are willing to comply with their lovers' wishes regarding condom use as well as spouses, and they engage in only a slightly lower level of supportive interactions with lovers than with spouses, but they feel much less emotionally close to lovers. If the discrepancy between emotional norms and the other norms variables for this category of sex partner is partially responsible for the lack of association between emotional norms and stage of change, this may reflect the differential power of women and men to negotiate condom use. Previous studies have found sex partner norms to be particularly powerful influences on the unprotected sexual encounters reported by women (Kashima, Gallois, & McCamish, 1993). Despite the existence of the female condom, which remains an expensive, inconvenient, and low-efficacy disease and pregnancy prevention alternative, women ordinarily do not use condoms themselves (Zierler, 1994), because condoms are designed for use by men. Consequently, womens' power over whether or not a condom is used in a given sexual encounter depends on their ability to influence their sex partner's willingness to use a condom. This fact, reflected in our selection of stage of change for "insisting that partners other than your main partner use a condom" rather than for "using a condom" as dependent variable, places a disproportionate share of the condom negotiation burden on women. Thus, although men are more likely than women to prepare for con-

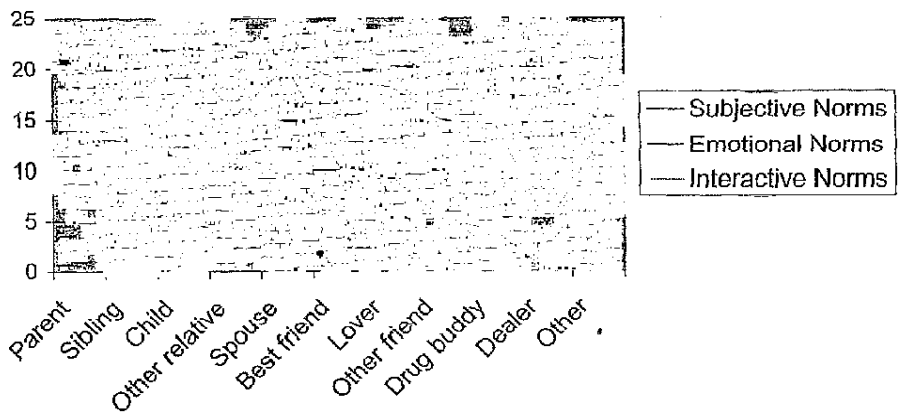

Figure 7. Norms Scores by Relationship Category

dom use by carrying condoms with them, men are unlikely to be the first to suggest condom use (Sacco, Rickman, Thompson, Levine, & Reed, 1993). Womens' disadvantage in condom use negotiations is exacerbated in drug-oriented "street" subcultures, where economic security and symbolic respect are often the principle organizing dynamics (Bourgois, 1995). Direct drugs/sex exchanges have been found to be a particularly common means of low-level smokeable cocaine distribution (Edlin et al., 1994; Latkin, Mandell, & Vlahov, 1996). For the provider of the drugs, such exchanges represent relative status superiority and control over sexual acts (Carlson & Siegal, 1991; Goldstein, Ouellet, & Fendrich, 1992; Inciardi, 1995). For the provider of sex, such exchanges represent economic distress and resulting lack of control (Elwood, Williams, Bell, & Richards, 1997). If this is true, then women for whom sex is a means of acquiring drugs and other wants can be expected to have particularly few resources with which to negotiate condom use and therefore to be more inclined to defer to the partners with whom they have "supportive interactions."

The above interpretation of the weakness of emotional norms is also consistent with the failure of any of the three attitudes-norms models to predict stage of change for women with low self-efficacy.[2] According to Bandura (1977), self-efficacy measures an individual's assessment of their ability to perform a given behavior under specific circumstances. This assessment may reflect an accurate estimation based on the existence of substantial external barriers to behavioral performance and/or an inaccurate estimation based on an actor's (low) self-esteem. If our summary of the literature on women in the street crack cocaine subculture is accurate, then cognitive domains like attitudes, beliefs, and internalized norms would be expected to influence the condom use among women in our sample to the degree that these women possess condom negotiation re-

[2] The null effects for the low self-efficacy subsample are not due to a lack of variance in dependent or independent variables among respondents within that group. Stage of change, subjective norms, and emotional norms have higher variance in the low-efficacy group, and interactive norms has a only a slightly lower variance. Thus it is unlikely that the null effects reflect uniformity of response to key variables.

sources. To the degree that they do not possess these resources, condom use is not up to them. If the low self-efficacy women in our sample were those with the fewest such resources, then neither their attitudes toward condoms nor any of the three alternative norms variables would be expected to affect stage of change for condom use.

The relative robustness of interactive norms as compared to subjective norms may be related to the much higher subjective norm scores for family and friend categories, and the slightly higher interactive norm score for the socially disapproved category of dealer. If this is so, then stage of change for women in our study would be less consistent with the perceived wishes of family members and friends than would be the case if behavior followed conscious willingness to comply. Such a discrepancy between a declared willingness to comply with family and an actual behavioral noncompliance would be consistent with Stryker's and Serpe's (1994) finding that actors overestimated the influence on their behavior of family members when they did not maintain frequent interactional contact with these family members. In light of these considerations, the results reported here have important implications for interventions aimed at increasing condom use among low-income women involved in the "street" drug scene. Ideally, interventions that appeal to self-aware, explicit cognitive processing should be accompanied by the provision of resources sufficient to increase the ability of low-income women, including those who use drugs, to negotiate their sexual choices. However, the current political climate favors decreasing or eliminating aid to low-income people (O'Campo & Rojas-Smith, 1998), leading to increased participation in sex work (Dodson, Joshi, & McDonald, 1998). Moreover, previous research has indicated that cocaine smokers often quickly deplete the relatively low level of resources once available through public assistance programs (Semaan et al., 1998; Wingood & DiClemente, 1998; Wohl et al., 1998). Thus, in addition to the provision of resources, interventions targeting women who use crack cocaine should be broadened to include sex partners of these women and other network members who exchange goods and services with them. Finally, given their limited access to economic resources, low-income women who use crack cocaine must reduce their drug consumption in order to acquire enough power to effectively negotiate condom use with their exchange partners (Hser, Chou, Hoffman, & Anglin, 1999). Thus HIV prevention interventions for women who use crack cocaine, particularly women who, like the participants in our study, report a high level of use, should include low-threshold interventions targeting cocaine use itself. Low-threshold interventions such as Miller's motivational enhancement have been shown to be effective in decreasing substance use among drug users, without carrying the esteem-threatening connotations that drug users attach to "treatment" (Barnes & Samet, 1997).

This study possesses some limitations. The results reported here are based on a sample of minority women who use crack cocaine. This study focuses on a single risk reduction behavior change and is thus not representative of all behaviors. However, the sexual context of condom use is a particularly appropriate area in which to study the effects of social relationships on behavior change. The small sample size constitutes an additional limitation. A sample of 61 cases only yields 62% power to detect a medium effect for the analyses we performed. However, the question of the relationship between specific social relationships and individual regarding behavior is an important one, and the current study is one of the first to explore this relationship using a popular behavioral model. At the very least, the results point to the importance of further research into this relationship.

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